

# Adult Education *in* Williamsport

EVENING SCHOOL COURSES

WILLIAMSPORT SCHOOL DISTRICT  
WILLIAMSPORT, PENNSYLVANIA



*Adult Education*  
*in*  
*Williamsport*

**Evening School Courses**

**Williamsport School District**

**Williamsport, Pennsylvania**

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## EDUCATION IN A CHANGING WORLD

Many people have come to realize that education is a never ending process which continues throughout life. Only a chosen few can afford the advantages of a formal college or university education after completion of their high school studies. The great mass of people who terminate their formal education in high school desire an opportunity to continue their education for additional cultural information and to better prepare them for vocational and leisure time pursuits. The Adult Education Program of the Williamsport School District is dedicated to the philosophy that every effort should be made to meet the educational needs of the public at all age levels. The Adult Education Program is serving and is ready to serve the public in whatever skills or intellectual pursuits they desire.

## GENERAL INFORMATION

The courses described in this folder are intended for all adults of the Williamsport area. The courses are intended for:

1. Adults who want to improve their skill or knowledge in their trades or occupations.
2. Unemployed adults who want to prepare for a job.
3. Employed adults who want to prepare for a better job.
4. Apprentices who need related training.
5. Adults who wish additional knowledge and training which will help in everyday living.
6. Adults who are looking for opportunities to develop their hobbies.
7. Adults who are seeking recreation through community groups such as musical organizations, athletics, etc.

## THE CALENDAR

Registration: This will be held on Wednesday and Thursday, of the last week of September.

Classes will be held from the first Monday evening in October until the last of April. The usual school holidays will be observed.

## SESSIONS

Classes meet either one or two evenings per week.

## **COSTS AND FEES**

The courses described are available to all residents of the Williamsport area. The only cost is a registration fee of \$2.00 which is required of everyone on the night of registration. This fee is returned if you attend 75% or more of the classes. However, students who enroll and do not attend any class, forfeit their enrollment fee. Books and supplies are provided by the student. In a few courses there is a special material fee.

## **INSTRUCTIONAL STAFF**

The instructional staff is composed of members of the Williamsport professional school staff and outstanding persons from industry and business.

## **CERTIFICATE OF ACHIEVEMENT**

A certificate of achievement will be issued to any enrollee completing 75% or more of the total sessions of a specific course.

## **HOW TO ENROLL**

Go to the Senior High School Cafeteria on West Third Street on the registration days, between 7 and 9 P. M. to register for the course or courses in which you are interested.

## AUDITING

A thorough and practical course for those persons who wish to go into auditing or wish to know what an auditor does.

Learning units consist of the following: The study of the principles of auditing, the conditions under which audits are performed, the purposes of an audit, the mechanics of a workable audit program, and the methods of checking and vouching for all items in a Balance Sheet statement and the Profit and Loss statement. There will also be some time spent in actually preparing auditing reports.

This course presupposes that the person taking it has definitely had sufficient Bookkeeping and Accounting to record transactions, prepare all statements (work sheets, balance sheets, profit and loss), and to do the adjusting and closing work at the end of a fiscal period.

Actual problems taken from accountant's files will give a practical side to the theory. Standards of good current practice and systems will also be given as a part of the service which an auditor renders.

## BANKING, REAL ESTATE, INSURANCE, AND INVESTMENTS

This course title really embraces four independent, but yet closely related subjects. Each course is designed to help persons interested in working in these growing fields of endeavor to acquire that preparatory training which he needs before entering the job. Those interested in acquiring information for their own personal use in investing money wisely will likewise find each course beneficial. Each section of the course will be carried on

for approximately eight weeks, with persons from the field helping to discuss certain phases.

**Banking:** History of banking and money in United States; study of functions of various kinds of banks; and practical suggestions for getting the best use from the bank in your community.

**Real Estate:** Terms peculiar to real estate, requirements for persons going into real estate business, records, laws governing responsibilities, suggestion for handling office details.

**Insurance:** Study of various kinds of insurance, terms peculiar to each kind, records, methods of interpreting and calculating formulas and tables.

**Investments:** Qualities of a good investment, study of kinds of investments, terms, and tests of sound investment.

## BEGINNING BOOKKEEPING AND ACCOUNTING

This course is intended for people interested in learning the fundamentals of Bookkeeping and Accounting. It is intended to teach these fundamentals so that one can do simple Bookkeeping work, or use it for the further study of accounting. It is also designed to help anyone in business in interpreting the different business records and reports.

The theory of debits and credits, journalizing, posting, the work sheet, adjusting and closing entries, and the reports will be covered in detail in this course. Appropriate exercises will be done by the student to give the student the practical know how of doing bookkeeping.

## **BUSINESS MACHINES**

In the Business Machines course you will first become acquainted with the operating principles of the various machines and then practice to gain speed and skill. The following machines will be covered: adding-listing, comptometer, electric typewriter, adding-book-keeping, electric and hand driven calculators, duplicating machines, and dictating and transcription units.

## **PERSONALITY AND HUMAN RELATIONS**

Employees and employers both need to understand themselves better. They need to be able to look at the other's problems and see how to help one another. Certainly if both could form a "team", business and industry would flourish.

This course is designed to help understand others as well as themselves. We need to all have personalities which are pleasing. We need to know what lies behind emotions. We need to know the effects of emotions on the day's work. Everyone could profit from this course. However personnel people would find this helpful in their work.

The present thinking is to bring doctors, ministers, teachers, successful business men, and, yes, psychologists to the class to help discuss certain factors which may be distorting our personality. A practical workbook will help keep a log of achievement. Topics relating to this subject will be reported on, after a selection has been made from current literature.

Yours for better employee and employer relations.

## **SECRETARIAL DUTIES AND FUNCTIONS**

This course is intended for both men and women, who wish to have a refresher course along the lines of secre-

tarial work. It is also intended for those who might be interested in getting an introductory course for the business field.

Such subjects as business correspondence (in its detail) are studied. All rules of alphabetic Filing are covered, the proper use of the telephone, with emphasis on courtesy and the manner of speech over the phone are discussed. Business machines, both duplicating, and calculating are stressed in this course. Typing, as a review for those who have not had the opportunity to use it frequently is offered, along with an opportunity for those who have not had any typing to familiarize themselves with it as an exploratory course. General office procedures and some office mathematics are included in this course.

The class is conducted on the lecture, discussion, and practical basis. Movies are used to demonstrate many of the varied techniques, as well as movies showing general business practices.

### SHORTHAND, BEGINNING

Beginning Shorthand is given in our evening school for those persons in business who want to get a knowledge of the principles of writing Gregg Shorthand. The course will include mastery of characters, word signs, and basic vocabulary drills. Dictation will also be given and letter practice will be a definite part of this course.

### SHORTHAND, ADVANCED

Intensive business-type dictation and individual theory and production problems of the students themselves, plus speed-developing theory and transcription drill (optional) make up the work plan of this course.

Stencil cutting, review of essential business English as applied to the business letter, tabulation, and secretarial practise "speed tips" are included at class request.

Each student may concentrate on dictation, theory review, or practical transcription and technical problems as he or she sees fit, since the goal of this class is to meet the individual needs of the secretary.

### **TYPING, BEGINNING**

Typing I is an elementary course in touch typing for personal and vocational use. Includes practice in typing business letters, outlines, manuscripts, and tabulating. A speed of 35 correct words per minute is an objective of this course.

### **TYPING, ADVANCED**

The business person who wishes to improve his or her typing ability and increase typing speed will find this course of value. Systematic speed drills and a timed writing series of proven value are used. Theory drill on basic tabulation, letter placement, rapid typing of multiple carbon copies, payroll forms, legal forms, various standard office forms, and chain feeding is emphasized in practical speed development.

Stencil cutting and basic fundamentals of standard office practise are included at class request. A speed of 60 words per minute with an accuracy standard of 1½% of error is the goal of this course.

### **DISTRIBUTIVE EDUCATION**

#### **Salesmanship**

The course in Salesmanship is designed to acquaint the individual with the steps of the sale and the psychol-

ogy of selling. It covers personality, persuasion, buying and selling motives, knowledge of merchandise, steps of the sale, sales campaigns, and the building of good will.

This course is organized in a series of lessons, with related information, questions, projects, and outside speakers. It is designed to appeal to adult retail store personnel, salesmen and agents, and others interested in entering the selling field as a career, or in advancing from present positions to higher ones.

### Pre-Christmas Training

The course in Pre-Christmas Store Training is designed to help prepare high school students (16 years of age and older) and others for part time store sales employment during the Christmas season. It covers required characteristics of the sales person, sales personality, employment applications, mathematics in store work, knowledge of merchandise, steps of the sale, and store systems. It is organized around practice sales in the store, demonstrations in the classroom, problems, questions, and visual aids.

This course is of interest to high school students, and others seeking retail saleswork during the Christmas rush season.

Class meets once a week for five weeks from 3:00 p. m. to 5:00 p. m. beginning about October 20th.

### CULTURAL LANGUAGE

Spanish (Beginning)—Explanation of fundamentals, words of high frequency, common idioms, understanding of simple sentences. Emphasis given according to demands of class.

Spanish (Conversational)—Easy readings, discussions about Spanish-speaking peoples, their countries, customs, habits. Students must have equivalent of two years of high school Spanish. Outside assignments given for greater variety.

French (Beginning)—Fundamentals, practice of pronunciation of high frequency words and idioms. Emphasis given according to demands of class. Reading aloud and in unison practiced.

French (Conversational)—Interesting readings about the French people, customs, habits, politics, etc. Students must have equivalent of two years of high school French. Outside work given on subjects of common interest.

German (Beginning)—Study of elementary forms, declension, word-order, words and idioms of high frequency. Emphasis given according to demands of class. Reading aloud and in unison.

German (Conversational)—Modern readings about Germany, its people, customs, habits, etc. Review of word-order, declension, sentence structure. Discussions about big cities in Germany. Students must have equivalent of two years of high school German.

## INSTRUMENTAL MUSIC

The citizens of Williamsport, Pennsylvania, believe that music is one of the most superlatively cultural assets that any community could have. In response to numerous requests on the part of local musicians, the Williamsport School District conducted a survey to determine whether or not enough people would be interested in the formation of a symphony orchestra. The results were very gratifying and the first meeting, under the direction of Osborne

Housel, was held on February 24, 1947, as a feature of the evening school program. Since its organization, the group has presented many concerts in Williamsport and nearby communities.

Meeting in the senior high school band room each Monday evening, many and varied occupations are represented in the personnel of the orchestra. Both Doctor of Divinity and Medicine have participated with housewives, prison guards, business men, mechanics, office workers, school teachers, laborers and advanced teenage music students. All of these people are unmindful of their daily occupations while they are joined together in a highly emotional expression in their common language of music.

### DRAMATICS

Training in pantomime, voice production, acting, make-up, and staging. This is accomplished with the class participating in the actual production of plays for the public. Plays which have been given by the class for the public are:

The Boor — Chekhov  
Balcony Scene — Elser  
Suited for Charity — McCoy  
Bridled — Lesher

### SPORTS APPRECIATION

Williamsport High School Gym Wednesday, 6-10 p. m.

Class to date has been limited to "rehab's" and "vets" with a few Tech High School pupils. Average attendance —50. We offer basketball, volleyball, table tennis, bag punching, boxing, wrestling, rope climbing, apparatus

(heavy), weight lifting, shuffleboard, and badminton.

We anticipate a basketball league with five shops sponsoring teams and possibly a volleyball tournament.

Prerequisites—gym shoes and clothing; towel for showers.

## ART WORKSHOP

A course in the decorative arts, offering to the layman an opportunity to experiment in design, color, and practical decoration.

Projects included are: stenciling, block printing, and screen printing on textiles; stenciling, hand decoration, and over-glazing on toleware (tinware); greeting cards, simple crafts; restoration and decoration of period furniture (in the style of the Early American and Pennsylvania German craftsmen).

## CERAMICS

This class will include the teaching of a course designed to give a step by step method presenting the basic operations in Ceramics. The use of clay in plastic, liquid and powdered forms will be employed in constructing the different forms of pottery, such as dishes, bowls and various other objects. Instruction will be given in coil-building, slab-building, throwing, molding, free form and many other techniques.

Also, included will be many different forms of decorating, such as spatter work, Pennsylvania Dutch, slip painting, carving, incising, underglazing, overglazing, gold and silver lustres and combining of glazes for drift effects. Instruction will be given on stacking both green and glazed ware in the kiln and on firing temperatures

used. This course, in general, gives the knowledge of how Ceramic clays are used in forming pottery, modern dishware and ornamental objects.

## CLOTHING I

Clothing construction for beginners. If you do not know how to sew, this is your class. Instruction is given in pattern buying, fitting patterns, cutting and simple sewing procedures and using the sewing machine.

Clothing for children is a speciality in this class. All types of smocking and decorative stitches are taught.

## ADVANCED CLOTHING CONSTRUCTION

You are eligible to enroll in this course if you can use a pattern, operate a machine and make simple cotton garments.

All types of materials may be used for the making of dresses, coats, suits, or renovating and restyling garments.

## MODERN METHODS IN SEWING

The up-to-date sewer uses the modified "Bishop Method" of sewing. This method gives your garments the commercial and professional look. The proper method of fitting the pattern and cutting the garment is emphasized. The garment is really "Machine-Made" with little hand sewing. The modern pressing methods are used which help to give the garments that professional touch and look.

## FOOD SPECIALTIES

The members of this class plan the projects, usually the preparation and serving of meal-in-one casserole,





party foods, buffet suppers, teas, and that-something-new-and-different dish have proven popular choices.

## FLOWER ARRANGEMENT

The Flower Arrangement class is planned to attractively arrange and display flowers, fruits, vegetables, or what-have-you, with character.

Flower arrangement is an art but the rules for arrangement are simple and easy to apply.

Bouquets and displays are made in class by the members using flowers, fruits, driftwood, shells and many other of nature's gems. These are blended into a harmonious unity which often glamorize the most lowly weed but results in a most worthy decorative note for the home.

Corsage making is taught, colored slides are used and experts in various areas of flower arrangement often come to the class and demonstrate their skills.

## HAND WEAVING

Materials may be woven for practically every purpose. One rug loom and several harness floor looms are available for use. Instruction on the floating warp loom is also given. Class membership is limited.

## JEWELRY AND METALCRAFT

The jewelry course is designed to give adults a means of expressing their ideas in silver. Contemporary and conventional designs are stressed. Jewelry may be made of all silver or a combination of metals. Semi-precious stones are available for use.

Copper and aluminum are used in the making of bowls, trays, candlesticks, wall plaques, letter holders, ash trays, etc.

## NEEDLECRAFT

A class designed for individual ambitions in using a needle.

This class offers instruction in knitting, crocheting, bobbin lace, needlepoint, smocking, quilting and rug hooking. Swedish darning and other forms of decorative stitches are taught.

## SLIP COVERS AND DRAPERIES

The Slip Cover and Drapery Class is designed to teach experienced sewers the techniques of fitting and constructing slip covers and the methods of measuring, cutting and constructing draperies. Each student in Slip Covers works on a cover for her own piece of furniture. The furniture is moved into the classroom and remains there until the cover nears completion. It is required, therefore, that each student have a definite problem or problems before registration will be made. A student may make Slip Covers or Draperies or both if desired. The class is limited in enrollment so early registration is recommended.

Prerequisites: Must be able to operate a sewing machine and have had some experience in actual sewing.

## TEXTILE PAINTING

This is a hobby course that can be for personal enjoyment or a profitable small business. It includes the study of color, design, and these three methods of applying this knowledge to textiles—stenciling, block printing, and silk screen printing. If your previous experience in art work has been meager, but your enthusiasm is high, you need not hesitate to join us.

## **FLY TYING**

Instruction in tying of fishing lures, their practical use and the source of materials. Basic types include wet and dry flies, streamers, nymphs, bass bugs and all special lures tied to standard specifications. The course offers tying as a profession or for personal pleasure.

## **HOBBY WOODWORKING**

Open to both male and female adults interested in a do it yourself program.

You work at your speed, one or two nights a week for three hours, on a project of your own choice in a well equipped shop.

1. Refinishing of Furniture.
2. Repairing of Furniture.
3. Building of New Furniture.
4. Boat Building.
5. Kitchen Equipment.
6. Gun Racks.
7. Turkey Calls.
8. Lawn Furniture.
9. Operation of Power Equipment.
10. Use of Hand Tools.
11. Storm Windows.
12. Screens.
13. Toys.
14. Metal Working.

## AIRCRAFT ENGINE MECHANICS

This course is intended to prepare men with some experience in the aircraft field for the C. A. A. written examination for Aircraft Engine Mechanics. It should be especially interesting to men who need an "E" license and to private or student pilots who wish to increase their knowledge of aircraft engines. The course consists of theory of operation and maintenance of the engine; magnetos and electrical systems; carburetors and carburetion; lubrication and oiling systems; propellers, and civil air regulations.

## AUTOMOTIVE MECHANICS, ELEMENTARY

A study of the fundamentals of modern automobiles. Analysis of engine operation, study of braking systems, investigation of power transmission. Methods of chassis construction and running gear. Lubrication, steering, and maintenance will be thoroughly explored.

## AUTOMOTIVE TUNE-UP METHODS

The course in engine analysis and tune-up is divided into 4 units. (1) The Engine (2) The Ignition System (3) The Fuel System (4) The Electrical System. The course begins with the study of the basic fundamentals of operation covering the four units listed above. The

service and repair of these units is studied, and the use of scientific test equipment is demonstrated.

This course covers especially the diagnosing of engine conditions, and the proper methods for the adjustments needed in engine tune-up.

### AUTOMOTIVE TUNE-UP APPLICATIONS

A technical course designed to teach the methods of dynamometer testing and measuring engine performance. In addition to teaching the application of engine diagnosis instruments, this course will teach the use of dynamometers, instruction in recording of test or experiment data, and interpretation of results.

### AUTOMOTIVE WHEEL ALIGNMENT AND BALANCING

Both the theory and practical work in wheel alignment and balancing are covered in this course. The different subjects included are: a study of the machines used in wheel alignment and wheel balancing, geometrical principles of alignment, need for good alignment, results of unbalanced wheels, dynamic and static balance, and methods of aligning and balancing present day automobiles.

### BASIC COURSE IN COMMERCIAL AND FINE ART

The primary aim of this course is to encourage an active participation in art, and prove to the student that any person who will follow instructions and put forth a reasonable amount of effort can learn to draw and paint.

Hence this Basic Art Course is necessarily designed

and adjusted to suit the individual needs and abilities of each student, advanced or beginner. Although he will be in a group, his direction will be as an individual, according to his needs and the realization of his ambitions, either in the field of Commercial or of Fine Art, since the same training is basic to each.

Class work consists of drawing and painting in all media: pencil, charcoal, watercolor and oil. A broad training is given in basic design, composition, perspective, methods and professional practise as applicable to advertising and fine art.

Course Units: elementary and advanced drawing and painting as applied to still life, landscape and portrait painting; the basic relationship of perspective, design and composition as related to magazine illustration and advertising art.

### **BLUEPRINT READING FOR THE METAL TRADES**

A course arranged in a progressive manner to assist a learner in interpreting the information shown on a blueprint which will enable the reader to visualize objects and to describe them in their true shape, size, application, and to obtain a knowledge of the conventional terms employed in industry.

The ability to read blueprints is essential for apprentices in all the metal trades. It is also valuable to workers in the trades who desire to advance in their respective occupations or to prepare for entrance into another type of work.

#### **Prerequisites:**

Drafting experience desirable but not necessary.

Ability to add and subtract fractions and decimals.

## BLUEPRINT READING (MACHINE SHOP)

The course in Blueprint Reading is designed to teach all the basic information necessary to interpret a blueprint. It covers the alphabet of lines, the methods of projection, the relationship of views, an understanding of dimensions, the significance of symbols, and alterations or revisions which commonly appear on blueprints.

This course consists of information essential for machinists, machine operators, patternmakers, core makers, molders, and apprentices employed in the metal working industries who desire to become more efficient in their present jobs or who wants to prepare for promotion.

## CARPENTRY AND BUILDING CONSTRUCTION

The related carpentry and building construction course is primarily intended for the apprentice carpenter, however, it may be very beneficial to anyone working or interested in the building trades; including home owners and persons contemplating building. It may also serve as a refresher course for the journeyman carpenter and builder.

This course includes some shop experience in connection with the theory discussed in the class room. A typical shop project is the building of a scale model house in detail exactly as the full size house would be built.

Upon completion of the course the individual is prepared to take the State Apprenticeship Examination for Carpenters in order to qualify as a journeyman carpenter or builder.

### Course Units:

1. Construction Materials—selection and use.
2. Hand and Portable Power Tools—use and care.

3. Shop Machinery—use and care.
4. Related Mathematics—for carpenters.
5. Blueprint Reading.
6. Surveying as applied to building layout.
7. Concrete and Masonry Construction—including form building.
8. Framing, Sheathing and Insulation.
9. Steel Square—roof framing and stair building.
10. Interior and Exterior Trim.
11. Paints and Special Coverings.

For people interested in millwrighting, foreman training and building contracting:

12. Millwrighting, Supports and Scaffoldings.
13. Estimating.

### DIESEL ENGINE MECHANICS (ELEMENTARY)

An introductory study of the principles of diesel engine construction. The course includes a study of the principles of diesel engine operation, analysis of diesel cycle, applications of diesel engines, methods of fuel injection, controlling engine speed, and diesel-electric plant operation.

### DRAFTING (GENERAL MECHANICAL)

Classes are open to those persons who are interested in learning drafting as a trade or to those who want training, supplementary to their daily employment, or to persons who are now employed in other trades in which an ability at sketching and/or blueprint reading are necessary.

This course is broad in nature and can be arranged to suit the needs of the individual. All instruction is on an

individual basis and a person may progress through the work just as rapidly as he is able to absorb the instruction.

The course consists of the following, arranged in a progressive manner: use of instruments, basic drafting, drafting standards, sheet metal layout, gear and cam drawing and detailing.

### **ELECTRICAL CONSTRUCTION**

Installation of wiring using romex, armored cable, rigid conduit and wiremold. Installation of service entrances and house wiring circuits, with Underwriters rules and power company regulations. Theory necessary for calculating wire sizes and use of meters in testing circuits.

### **ELECTRICAL MAINTENANCE (INDUSTRIAL)**

Installation and testing of lighting circuits. Use of meters and testing equipment in finding faults in control wiring and motors. Installation and testing of motor starting switches and motors.

### **ELECTRICAL THEORY**

This course is for men who are working in trades requiring a knowledge of electricity or who are preparing for employment in the electrical field. The student acquires the theory necessary for a thorough understanding of his trade problems and thereby prepares himself for many opportunities in electrical work. All parts of both direct and alternating current are covered.

Principles of Ohms Law, volts, amperes and resistance in series and parallel circuits are covered. Also included are line drop and power calculations, wire size calculations, batteries, magnetism, generators and motors, and use of electrical meters and instruments.

## MACHINE SHOP PRACTICE

The Machine Shop course consists of both practical work and theory. The course involves a thorough study of cutting tools, procedures and calculations, operation of the various machines, bench layout, and assembly work. Particular attention is given to a study of related trade information which foremen in industry seldom have time to explain.

The course will be helpful to those who wish to prepare for work in this field, or for those who wish to prepare for promotion.

## NEON FABRICATION

The new fabrication course is designed primarily to help sign painters and helpers in the field overcome production problems. Although the beginner is welcome and can obtain a working knowledge of glass bending and pumping.

In this course it is hard to obtain enough to open a course but it will be put on each year if enough people show interest in it.

Students are required to pay for the glass they use, (cost around 8c a four foot length).

## OFFICE MACHINE SERVICEMAN

Diagnose the defects in the machine by inspection, disassembling, and examining the moving parts or other mechanism, or by starting the machine in operation and listening for any unusual sounds; if machine is merely out of adjustment, tighten, loosen, set and otherwise adjust gears, guides, rollers, pinions, and other parts, using hand tools, such as wrenches, pliers and screw drivers;

if machine has a broken or defective part, remove the part and repair it, or replace it with a new one; oil the moving parts of machine and clean them. Give instructions to machine operator, explaining the action of the mechanism, and otherwise instructing him how to avoid damaging the machine. If machine is worn enough to require rebuilding, he will dismantle, clean, refinish parts, and replace all worn parts with new ones, assemble and adjust to factory standards for new machines. Assemble new business machines.

## OFFSET LITHOGRAPHY CAMERA AND PLATEMAKING

This course is offered to all adults associated with the printing industry and others who are interested in learning more about this method of printing. It will consist of the following:

**Camera Work**—Line and halftone negatives, the lens, illumination, film, focusing, darkroom, chemicals, exposure, processing, and the use of filters.

**Halftone Instruction**—The photographic process, how to use the screen, exposure, and processing the negatives.

**Platemaking**—Stripping, the work after the negatives are made, such as making the flat, imposition, tints, etc.

In the actual making of the plate we will make albumen, deep-etch and bi-metal plates. You will study chemistry, counter-etching, coating, exposure, development, etching, care of tools, and troubles encountered.

## OFFSET—PRESS OPERATION

This course will be offered to those who desire to further their knowledge of Offset Press Operation.

The operation of the modern Harris and Webendorfer offset presses is thoroughly covered. Some of the press adjustments and problems covered are paper handling, the feeder, setting the conveyor, side and front guides and setting the delivery, the care of the plate and blanket, handling gum and water, different inks and their characteristics, adjustments to the ink fountain and the dampening system, cleaning the press, press troubles, and safety in the press room.

### PRACTICAL MECHANICS AND STRENGTH OF MATERIALS

A course in **practical mechanics and strength of materials**—for draftsmen, drafting students, and mechanics in general.

The course to consist of instruction about stress and strain, properties of materials, strength of materials and their respective safe loads, design of beams, columns, viseted joints, general information on gear design, resolution of forces, problems on center of gravity and moment of inertia in basic form.

Good working knowledge of common arithmetic essential.

### PRECISION MEASUREMENT AND INSPECTION

This is a study of the proper care and the proper use of precision tools and instruments used in the metal machining industry. The laboratory work will include the use, care, and maintenance of instruments such as micrometers, dial indicators, gage blocks, vernier height gauges, vernier calipers, comparator, hardness testers, micro-projector, and monochromatic light.

## RADIO (ADVANCED) AND ELECTRONICS

This course is intended for those already working in the radio and electronics field, and who desire additional knowledge. The course will include advanced radio and electronic theory, industrial electronics, advanced construction practice, and trouble shooting on electronics apparatus.

## RADIO COMMUNICATIONS

For those interested in obtaining radio telegraph and radio telephone licenses. Instruction in radio law and F. C. C. rules and regulations will be given. Broadcasting studio practice and international code will be included in this course.

## SHOP MATHEMATICS AND SLIDE RULE

Designed primarily for industrial workers, this course will give experience in the practical use of mathematics, and is recommended for anyone desiring to refresh or improve his mathematical skill. The course is conducted on an individual basis so as to make it possible for the student to work on the particular phase of math which he needs, without being restricted to the work or speed of others in the room.

Subjects available for study are: Fractions, decimals, percentage, proportion, square root, areas of plane figures, volumes of solids, algebra, solution of triangles by trigonometry, logarithms, and slide rule. The scope of this course can be expanded beyond this outline to meet individual needs.

The slide rule work includes reading the scales, multiplication, division, proportion, squares, cubes, roots, com-

bined operations, and decimal point location. Advanced work using the reciprocal, folded, trig., log, and log scales is available for those who are qualified. Possession of a slide rule is desirable but not essential.

### **SHEET METAL LAYOUT AND DRAFTING**

An expert sheet metal worker must be able to solve both the mathematical and the geometrical problems in layout. This course is especially designed to supplement training of those persons now employed in the sheet metal trades, or of the man doing erection work where a knowledge of sheet metal pattern layout and sheet metal blueprint reading are essential to advancement.

All the fundamentals of laying out the common forms used in the sheet metal trade are taught including practical geometrical problems, development of forms using parallel lines and radial lines, and triangulation problems.

This is an excellent course for the man who wishes to advance in his trade or go into business for himself.

### **SMALL HOMES DESIGN**

The objectives of this course are to provide the future home owner with the necessary training and knowledge in order to make complete house plans, including landscaping, and specifications.

### **SIGN PAINTING**

The sign painting course is designed primarily to help sign painters and helpers in the field but will also teach the beginner the basic principles of sign painting so that he may paint a sign for himself or someone else. Individual problems in gold leaf, show card writing, window

lettering, layout problems are studied and worked out.

Class meetings will be determined at the beginning of evening school, usually twice a week from 7 P. M. till 10 P. M.

## STRUCTURAL DRAFTING

In this course the student learns to design and detail steel, wood and concrete structures. The framing of industrial buildings, consisting of beams and columns, girders and trusses are examples. The graduate will be qualified to work in an office of an architect, a professional engineer or building contractor, doing this type of work.

Course consists of lecture, discussion, and drafting. The lecture and discussion phases cover simplified mechanics of engineering and steel construction; building codes; specifications for the design and erection of steel, concrete and wood for buildings; construction practice; building design and materials; structure detailing; and practical problems. The drafting phase covers, basically, the determination of stresses in building framing by drafting, which is commonly called the mechanical or graphic method. Drafting will include also, short problems in structural detailing most generally encountered in steel and concrete construction.

## SUPERVISORY TRAINING FOR INDUSTRY

The objectives of this course are:

- A. To give supervisors or those who plan to be a supervisor, a better understanding of their responsibilities and how to meet them.
- B. To provide a basis for a better understanding of the fundamentals of human relations and their relations to good supervision.

C. To bring to class various supervision problems and to strive for a solution through the conference method.

This same course can be conducted in the various industrial plants, providing they sponsor the course. Firms who have already used this service are: Philo Corporation at Watsontown, Avco Corporation at Williamsport and the Wald Industries at Montgomery.

### TECHNICAL ILLUSTRATION

Technical Illustration refers to the preparation and illustration of technical or mechanical subjects for reproduction in advertisements, service manuals, or other printed material. Technical illustration is also used in modern visual aids work.

Persons working in or interested in photography, retouching, advertising, drafting, architecture, photo-engraving, etc., will find the course a valuable one.

Instruction is given in orthographic projection, one and two point perspective, rendering light and shadow by dry point technique, air brush, and photo-retouching.

### TOOL AND DIE DESIGN

The objective of the Tool and Die Design course is to provide practise in designing and making drawings of jigs, fixtures, gages, cutting tools, dies and specialized mechanical devices. The material is presented in individual job sheet form according to the course outline as approved by the American Society of Tool Engineers. Advanced practise on "live" projects is given by designing small tools and machines that are made and used in the WTI shops. Exacting workmanship, industrial drafting practise, fundamentals of mechanical design and a work-

ing knowledge of the above subjects will be obtained by the student.

The skills developed by this course can lead to a job as a tool and die designer. For an individual employed in tool and die design, or a related trade, this course can be used to fill-in experience he has missed or found a need for.

A working knowledge of arithmetic is necessary to start.

## WELDING

### ELECTRIC AND OXY-ACETYLENE, HELI-ARC

This combination course is intended for apprentice welders, tackers, welder helpers, farmers, and sheet metal workers.

Electric Welding includes laying out, shearing, setting up and testing the general types of joints welded in the flat, vertical and overhead positions with different types and sizes of electrodes. Also the welding of sheet metal, cast iron and hard surface welding.

Acetylene Welding includes safety, the setup of equipment, preparation, welding and brazing of steelplate, cast iron, and aluminum, repair of broken farm equipment, the Heli-arc welding of aluminum and stainless steel.

There will be a small charge for material.



